

CLAIMS

11. Claims 1-17 (canceled).

Claim 18 (currently amended): A method of separating a substance from a non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of a substance other than a polypeptide or an enzyme by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme,

utilizing a mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture of substances
~~—absent any chemical reaction—~~,

impacting said non-atomically bonded combination or mixture of substances that contains said substance other than a polypeptide or an enzyme with said at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance other than a polypeptide or an enzyme by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme,

reacting said at least one chemical reaction that alters the molecular structure and alters at least one physical characteristic of said substance other than a polypeptide or an enzyme, by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme with said non-atomically bonded combination or mixture of substances that contains said substance other than a polypeptide or an enzyme which does alter the molecular structure and does alter a physical characteristic of said substance other than a polypeptide or an enzyme that is in said non-atomically bonded combination or mixture of substances, and

separating said substance other than a polypeptide or an enzyme with altered molecular structure and altered at least one physical characteristic from said non-atomically bonded combination or mixture of substances by utilizing said mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture ~~—absent any chemical reaction—~~.

Claim 19 (currently amended). A method of separating a substance from a non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance,

utilizing a mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture of substances absent ~~any~~ a chemical reaction,

impacting said non-atomically bonded combination or mixture of substances that contains said substance with said at least one chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance,

reacting said at least one chemical reaction that alters the molecular structure and at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance with said non-atomically bonded combination or mixture of substances that contains said substance which does alter the molecular structure of said substance and does alter a physical characteristic of said substance that is in said non-atomically bonded combination or mixture of substances, and

separating said substance with altered molecular structure and altered at least one physical characteristic from said non-atomically bonded combination or mixture of substances by utilizing said mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture absent ~~any~~ a chemical reaction.

Claim 20 (currently amended). A method of separating cellulose from a non-aqueous non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one organic chemical reaction to alter the molecular structure of cellulose and alter at least one physical characteristic of cellulose by adding at least one atom to the molecular structure of cellulose,

utilizing a mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from a non-atomically bonded combination or mixture of substances
~~absent any chemical reaction,~~

impacting said non-aqueous non-atomically bonded combination or mixture of substances that contains cellulose with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose,

reacting the cellulose contained in said non-aqueous non-atomically bonded combination or mixture ~~or~~ of substances with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of the cellulose that does alter the molecular structure and does alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose, and

separating the cellulose with the altered molecular structure and the altered at least one physical characteristic from said non-aqueous non-atomically bonded combination or mixture of substances by using said mechanical means of separation that uses the altered at least one physical characteristic of the cellulose to physically change the place or position of the altered cellulose that removes or isolates the altered cellulose from said non-aqueous non-atomically bonded combination or mixture of substances ~~absent any chemical reaction.~~

Claim 21 (previously added). The method of claim 18 comprising, using another one or more chemical reactions to reconstruct the altered molecular structure and the altered at least one physical characteristic of said substance other than a polypeptide or an enzyme to the original molecular structure and to the original state of the at least one physical characteristic of said substance other than a polypeptide or an enzyme that existed prior to the separation by said mechanical means of separation.

Claim 22 (currently amended). The method of claim 18 comprising, using ~~any~~ a mechanical means of separation prior to reacting said at least one chemical reaction that alters the molecular structure and alters at least one physical characteristic of said substance other than a polypeptide or an enzyme, by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme with said non-atomically bonded combination or mixture of substances which does alter the molecular structure and does alter a physical characteristic of said substance other than a polypeptide or an enzyme that is in said non-atomically bonded combination or mixture of substances.

Claim 23 (previously added). The method of claim 18 comprising, using a chemical reaction to alter the molecular structure of matter and to alter the specific gravity of matter in said non-atomically bonded combination or mixture of substances by removing at least one atom from the molecular structure of the matter.

Claim 24 (currently amended). The method of claim 18 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids ~~as the base solutions~~ each having a different specific gravity.

Claim 25 (previously added). The method of claim 18 comprising, using magnetic attraction as the mechanical means of separation.

Claim 26 (previously added). The method of claim 19 comprising, using another one or more chemical reactions to reconstruct the altered molecular structure and the altered at least one physical characteristic of said substance to the original molecular structure and to the original state of the at least one physical characteristic of said substance that existed prior to the separation by said mechanical means of separation.

Claim 27 (currently amended). The method of claim 19 comprising, using ~~any~~ a mechanical means of separation prior to reacting said at least one chemical reaction that alters the molecular structure and at least one physical characteristic of said substance by removing at least one atom from the molecular structure of said substance with said non-atomically bonded combination or mixture of substances which does alter the molecular structure and does alter a physical characteristic of said substance that is in said non-atomically bonded combination or mixture of substances.

Claim 28 (previously added). The method of claim 19 comprising, using a chemical reaction to alter the molecular structure of matter and to alter the specific gravity of matter in said non-atomically bonded combination or mixture of substances by removing at least one atom from the molecular structure of the matter.

Claim 29 (currently amended). The method of claim 19 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids ~~as the base solutions~~ each having a different specific gravity.

Claim 30 (previously added). The method of claim 19 comprising, using magnetic attraction as the mechanical means of separation.

Claim 31 (previously added). The method of claim 20 comprising, using another one or more chemical reactions to reconstruct the cellulose with the altered molecular structure and the altered at least one physical characteristic to the original molecular structure of the cellulose and to the original state of the at least one physical characteristic of the cellulose that existed prior to the separation by said mechanical means of separation.

Claim 32 (currently amended). The method of claim 20 comprising, using ~~any~~ a mechanical means of separation prior to reacting the cellulose contained in said non-aqueous non-atomically bonded combination or mixture of substances with said at least one organic chemical reaction to alter the molecular structure of the cellulose and alter at least one physical characteristic of the cellulose that does alter the molecular structure and does alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose.

Claim 33 (previously added). The method of claim 20 comprising, using a chemical reaction to alter the molecular structure of the cellulose and to alter the specific gravity of the cellulose in said non-aqueous non-atomically bonded combination or mixture of substances by adding at least one atom from the molecular structure of the matter.

Claim 34 (currently amended). The method of claim 20 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids ~~as the base solutions~~ each having a different specific gravity.

Claim 35 (previously added). The method of claim 20 comprising, using magnetic attraction as the mechanical means of separation.

Claim 36 (previously added). The method of claim 20 comprising, using said at least one organic chemical reaction to alter the molecular structure and to alter at least one physical characteristic of cellulose by adding a ketone compound or an aldehyde compound to the molecular structure of cellulose.

Claim 37 (previously added). The method of claim 20 comprising, reacting cellulose that has carboxylic acid groups on the cellulose molecule from a previous oxidation reaction with an alcohol compound that bonds to the carboxylic acid groups on the cellulose molecule.

Claim 38 (previously added). The method of claim 20 comprising, using at least one organic chemical reaction to alter the molecule structure of cellulose and remove lignin from the intermolecular bond with cellulose without forming a carboxylic acid group or a ketone group on the cellulose.

Conclusion

12. The claims 22, 24, 29, 32, and 34 of the present invention have been amended based on the Examiners constructive analysis in regard to 35 U.S.C. 112. The claims 31, 33, and 35-38 were not amended because the Examiner allowed the claims in the previous action. Claims 18, 19, 23, and 29 were amended for indefinite or unnecessary language. The prior art of either of the two Davidson patents were not within the scope of the claims of the present invention so claims 18, 19, and 20 were not amended due to either Davidson, claim 20 in fact, had been allowed by the Examiner even in light of either Davidson. Davidson agglomeration is merely a clumping of coal fines and does not use a chemical reaction to alter the molecular structure of a substance to be separated. Davidson desulfurization uses a chemical reaction to alter a molecular structure of substance that is to be separated but does so from an atomically (covalently) bond combination or mixture that is not within the scope of the claims of the present invention. Claims 23, 25, 28, and 30 were not amended because the prior art of Davidson did not fall within the scope of the base claims of dependent claims 23, 25, 28, and 30. While specific gravity and magnetic separation are well known in the separation arts the present invention requires the use of a chemical reaction to alter the molecular structure of a substance to be separated from a non-atomically bonded combination or mixture. The invention also seeks to alter at least one physical characteristic from the change in the molecule structure that will make a mechanical means of separation such as specific gravity or magnetic separation possible when it had been impossible before the alteration.

Request for Constructive Assistance

5. The undersigned has made a diligent effort to amend the claims of this application so that they will comply structurally and in light of prior art. If, for any reason, the claims of this application are not believed to be in full condition of allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner in drafting acceptable claims pursuant to MPEP 707.07(3) or in making constructive suggestions pursuant to MPEP 706.03 (d) in order that this application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Very Respectfully,

Durham R. Maples
Applicant Pro Se
1507 Park Circle
Camden, S.C.

I hereby certify that this
correspondence will be
deposited with U.S. Postal
Service by First Class Mail, postage
Prepaid, Certificate of Mailing, in an
envelope addressed to the
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
on the date below.

Date: 5/7/04

Inventors Signature: Durham R. Maples